LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: ASME/ANSI A112.19.8M-1987 (Reaffirmed 1996) Suction Fittings for Use in Swimming Pools, Wading Pools, Spas and Hot Tubs - DRAFT Standard Review/Revision

DATE OF MEETING: October 9, 2004

PLACE OF MEETING: Hyatt Regency O'Hare Airport - Chicago, Illinois

LOG ENTRY SOURCE: Troy Whitfield TW

COMMISSION ATTENDEES: Troy Whitfield

NON-COMMISSION ATTENDEES:

Leif Zars, Gary Pools – Project Team Leader
Gary Duren, Code Compliance – Deputy Project Team Leader - A112 Main Committee
Steve Barnes, Paramount Pool & Spa Systems – Project Team Secretary (Acting)
Jim Hunter, Pentair Pool Water
Robert Rung, Hayward Pool Products
Ron Schroader, New Water Solutions
Harry Newhard, World Wide Sports
Dave Allen, ITT Hydro Air

GUESTS

Steve Weinman, ASME
Sal Aridi, NSF International
Peter J. Poczynok, Triodyne Safety Systems

SUMMARY OF MEETING:

The meeting called to order at 9:02 AM, by Lief Zars, Project Team Leader.

A motion to approve the Agenda was submitted by Jim Hunter and 2nd by Robert Rung. The Agenda was approved by unanimous voice vote with Troy Whitfield abstaining from all voting, as required by U.S. Consumer Product Safety Commission standards development participation directives.

A motion to approve the Minutes of January meeting was submitted by Robert Rung and 2nd by Jim Hunter. The Minutes of the January meeting were also approved by unanimous voice vote with Troy Whitfield abstaining.

Mr. Zars mentioned the ASME/ANSI anti-trust policy which basically states that this meeting is limited to standards development and there will be no discussion of product pricing during the meeting.

Mr. Zars made some introductory comments regarding voting procedures and addressed the "two cent screw" comment by Vice Presidential candidate, John Edwards made in Vice Presidential Debate of October 5, 2004. This committee is responsible for this issue and this committee needs to deliver. This committee needs to use the best information available, even though there may be new and better information in future. Current information needs to be used now to protect consumers. Future knowledge can and will be added via future addenda to this standard. This version is not the end of our work.

Brief introductions were made by each Member and each Guest present.

An inquiry was made regarding the presence of a quorum. The Project Team Leader explained that based on instructions from the Secretary of the ASME Standards Committee A112, a quorum of the full A112.19.8 Project Team need not be present to conduct business and that the final approval of the work done today will be handled by letter ballot and that a simple majority of Voting Members present will determine the policies to be included in the new A112.19.8 draft.

The first item of discussion was the scope of the standard and the 'class' designation created to handle commercial and residential requirements. The issue of the scope being too broad was raised in the January meeting with two options having been presented. First, revise scope to eliminate commercial pools, i.e. large, high flow covers, including custom covers for water parks; or second, revise the standard to address the unique requirements associated with these large, high flow covers. The committee decided to address them and as a result the 'class' system was adopted to deal with the unique requirements at the time. In the absence of this standard addressing these large, high flow covers, there is not another standard available. This is the standard many code officials reference, therefore it is better to address the issues and not wait for another standard to be developed.

There was significant discussion regarding the technical aspects of the body block test without a motion or a definitive conclusion. There was a request for new requirements for "domed topography" for small and medium sized covers. Discussion about covers less than twelve inches would have a minimum of 1.5" to 2" raised surfaces, while twelve to eighteen inch covers would require a raised surface in the area of 1", while larger grates would be permitted to be completely flat. After a brief discussion, no voting member provided a motion to adopt the concept.

A discussion regarding the standard criteria ensued. The standard needs to be performance based rather than code based as it is now. There was some agreement that design requirements should not be included. An example of "design criteria" was cited as the velocity limitation of 1.5 fps for Classes 1, 2 and 3 and also the 185 gallons per minute (gpm) and the 400 gpm limitations currently found in Classes 4, 5 and 6.

Following some additional discussions about the 'class' designations putting some products at a disadvantage, Mr. Zars made the point that this standard must be safety driven and if that helps or hurts a product, that should not affect this decision.

There was a motion to remove the "design criteria" limiting flow rates through cover/crate to 185 gpm (current Classes 4 and 6), and 400 gpm (current Class5). The motion passed: 8 yes / 0 no and Troy Whitfield abstained.

The Project Team agreed verbally, without objection, that all covers/grates must be tested using both hair test protocols (full and 2 oz.) and to disallow bypassing the hair tests by rating cover/grate based on 1.5 feet per second velocity through cover/grate openings. One exception was the current Class 1, custom covers, pending their final disposition within the scope of the standard.

The next discussion was to remove the 1.5 feet per second (fps) references/limitations. There was a comment that the 1.5 fps comes from commercial gravity tank draw down specifications. Another member commented that he was unsuccessful in finding the origins of this long used number, noting that a similar limitation/allowance is used in Europe based on communications with SPATA. There was further comment that the 1.5 feet per second prevision was introduced because the original standard required a small test tank incapable of effectively testing a cover/grate at a high flow rate. With the limitation of tank size removed, the 1.5 fps prevision could be eliminated.

There was a motion to remove the 1.5 feet per second limitation/allowance from the standard, with the exception or current Class 1, custom covers, pending their final disposition within the scope of the standard. The motion passed: 7 yes / 1 no - Troy Whitfield abstained.

There was discussion about including a 'full head of hair' test. There was agreement to the use of both hair tests (full and 2 oz.) as way to rate flow, but not entanglement. There was no objection to using more hair. Low end is okay, but the high end is not, because the 5 lbs hair test limit is not scientific. There was comment that the 5lbs is based on what force a young girl is capable of pulling in order to free herself and the amount of pain a young girl could withstand before giving up the struggle to pull free. There was comment that we can not move to a higher pull threshold without new information documenting that the 5 lbs pull in the current standard is too low. After a lengthy discussion, a straw vote to see if there was any support to change the current 5lbs. hair test. 7 voted not to change / 0 voted to change / 2 voted to abstain.

There was further discussion on the full head of hair test. More research is needed to determine what constitutes a full head of hair. Comments were provided on testing and data previously provided to the Project Team. A copy of hair reports previously sent to committee will be provided to those who have not reviewed the results. A vote was proposed to see if there was any support to change the current "full head of hair specifications" after the test requirements were read to the committee. The results of the straw vote to keep the current hair test language were: 7 yes / 1 no with Troy Whitfield abstaining.

A proposal for all covers/grates to have "escape geometry" was discussed. It is believed that the term "escape geometry" is misunderstood and that a manual "tying" of hair (string) behind covers, to then be followed by a pull test to see if it can be removed with less than 5 lbs force needs to be included. After a lengthy discussion, a straw vote to see if there was any support to develop, correctly define, and add an "escape geometry" test was proposed. The results of the straw vote to add "escape geometry" test were: 1 yes/ 6 no / 2 abstain.

After a lengthy discussion about the 99th percentile man and the origins and technical aspects of the "torso specimen is defined as a rectangular form representing the flat portion of the 99th percentile adult male body (Appendix B)", a straw vote to see if there was any support for removing it from the standard. Straw vote to remove the 99% man: 3 yes/ 4 no / 2 abstain.

There was some discussion regarding the use of a material to simulate the body during entrapment. Basically, there is no data to support the rationale for the material used. The properties of this kind of material are scattered, but the particular vendor discussed provided consistency where all others could not and it was selected to be the most like flesh, a subjective judgment. There is a similar material used in ASME/ANSI A112.19.17, but that Project Team did not see the need for a specific material specification. A sample of the material was passed around as well as another sample previously used for this type of testing. After a lengthy discussion of the subject a request for a straw vote asking to test the material to see how it works and report back to the committee was made. The straw vote results to have a team member test and report back: 1 yes / 6 no / 2 abstain

After additional discussion, the rationale used for the material specification was understood. Following verbal explanations from the Project Team, as compared to reading the standard, especially with a lack of rationale present in the standard the use of the material was accepted.

After some discussion on body entrapment testing, a motion "to remove body entrapment testing from the standard until there is sufficient research and a test protocol to support the wording and performance requirements that wind up in the standard" was made. It being further understood that the current test is to be replaced with a test criterion to be submitted to the group for round robin testing. The motion failed: 3 yes / 5 no with Troy Whitfield abstaining.

After a lengthy discussion regarding a 'Finger Test', including the UL Articulate Probe test device and example covers/grates passing and failing the test, no voting member provided a motion to replace the finger entrapment test with alternative language. A guest in attendance was invited to provide a sample drain that *passes* the current finger entrapment test, but is an example of a cover/grate that should *not pass* the test and in an absence of a failed cover/grate example, the wording will remain unchanged. (Exception: clarification of the meaning of 1 inch is required as a result of new business below.)

The issue of field built sumps was then discussed. One guest raised a concern that the 1.5 times the pipe diameter may not be suitable for all covers/grates. Two members pointed out that it is a minimum requirement and the cover/grate manufacturer may choose to use it instead of providing their own sump design for field built sumps. After a lengthy discussion, no voting member provided a motion to change the language. The concerned guest was invited to provide data to show that the 1.5D is not correct and may cause a hazard. In the absence of data, the wording and the diagram in the current draft of the standard will remain unchanged. One member felt that the language needs to be reviewed for clarity to make sure it is understood that this 1.5 x D language only applies to field built sumps where the cover/grate manufacture doesn't provide their own design criteria and that it never applies to covers/grates with manufactured sumps or bulkhead fittings because they are tested as part of the hair tests. The reason for this 1.5D language it to prevent pipes from being installed directly under a grate where localized, high velocities will be created, resulting in a potential hair entrapment hazard. This concept is already being misapplied by California inspectors so this committee must be proactive to clarify the reason for this language, clearly delineating where it does and does not apply.

There was a brief discussion on 'Center Loading Only' and the committee unanimously agreed to replace "representative" with "two points" in the applicable section.

There has been discussion during previous meetings on a hair pulling fixture. The confusion and misunderstanding by a member was resolved. No action needed.

UV Requirements for drain covers was briefly discussed. The committee unanimously agreed to the following: Remove indoor / outdoor distinctions anywhere they occur in the standard, assume all covers/grates will be used outdoors. Correct all affected (directly and indirectly, i.e. testing / labeling / markings) sections of the standard.

A discussion about a comment received that stated "Openings may not be round" ensued. It was learned that the 'single dimension' cited in the standard could be interpreted as a diameter. After a brief discussion the committee unanimously agreed to change the wording from .5" to .375" as the maximum orifice/opening size required to exempt a cover/grate from the pull test.

To address the water depth for cover testing and accommodate shallow water testing of a Swimjet unit that includes a pump, the committee agreed 6 yes / 1 no / 2 abstain, to the following: "or test according to manufactures instructions" for this type of package unit.

The wording shall be such that other classes of covers/grates may not deviate from the prescribed test protocols - "No new loop-hole."

The language "The fitting shall be marked as follows in a manner that is visible in the installed position and where the text is no smaller than 10 pt (0.1-inch high)" is causing confusion. Some are interpreting it to mean the etched, engraved letters must stand off the part 0.1 inches high or deep, this is not the intent. The 0.1 inch is intended to mean the font must be $1/10^{th}$ of an inch tall. After a brief discussion the committee unanimously agreed that the language must be modified to eliminate the confusion and the words "Permanently Marked" were added to clarify the markings on a cover/grate. No member expressed an objection to the intent.

There was a discussion about including the year of the standard as a requirement to be included next to the A112.19.8 logo or after the ASME A112.19.8 reference on the tested cover. The committee voted 5 yes / 3 no with Troy Whitfield abstaining, to require the revision year of the standard to which the cover/grate was tested and listed. As a result, the current language was noted to be confusing, indicating that the ASME logo would be an option. To eliminate the confusion the committee unanimously agreed to remove word "ASME logo", to be replaced by "ASME A112.19.8 Logo." A figure in the draft will show an example of the new A112.19.8 service mark requested by industry and inspectors, "like the UL™ mark on electrical components."

A need to add thickness dimensions to UL Articulate Probe was discussed. The committee unanimously agreed to add the knuckle dimensions (two for each knuckle) to the Finger Probe Drawing.

A brief discussion by the committee regarding "Suggestions for Correcting Grammar and for Clarification of Content" submitted by a voting member ensued. The committee agreed to accept the suggestions and include them in the next draft as appropriate.

After a lengthy discussion regarding the ability of the standard to accommodate the differenced between custom covers/grates, those approved for use as a single, direct suction cover/grate, those approved for use only as a multiple covers/grates, and after reviewing the affects of the votes to remove the 185 gpm, 400 gpm and the 1.5 feet per second limitations the following motions was made.

Eliminate Class designations while delineating the technical difference, including new marking/packaging requirements. The motion passed: 4 yes / 2 no / 2 abstain.

After a lengthy discussion to evaluate the affects removing the Class designation in the standard, the following motion was made.

Covers/grates which pass the body block test shall be permanently marked "for single or multiple drain use", or "single drain use only", or "multiple drain use only" at manufacturers option. The manufacturer may choose *not* to test a cover/grate for use as a single, even if it is possible for the cover/grate to pass the test, and it shall be permanently

marked "for multiple drain use only". All other requirements of the standard shall be met.

Several guests and a member expressed a desire to confirm the validity of the current body entrapment test for certification of covers smaller than the 18" x 23" representation of the 99 percentile man. A guest agreed to evaluated the effects of bowl type pool bottoms before presenting the findings to the Project Team. The motion passed: 7 yes / 0 no / 1 out of the room and an abstention. A time frame of three to four weeks for completion was mentioned in passing but this was not a firm commitment to the Project Team. Additionally it was mentioned that the results of this work may result in the need for another meeting.

After more discussion to evaluate the affects of removing the Class designation, the following motion was made.

"For purposes of this standard compliance for "field fabricated cover/grate" (formally Class 1) shall be the responsibility of the registered design professional." The motion was further understood to include a requirement for the definition of a "registered design professional" based on the current ICC/IRC definition of the same. The motion passed: 7 yes / 0 no / 1 out of the room with Troy Whitfield abstaining.

There was further discussion clarifying that "field fabricated cover/grate" (formally Class 1) must be designed to pass all tests (vertical load, horizontal load, etc.) with the only exception being the hair tests. (Some members did not realize the applicability of these to this Class.)

There were some motions made under "New Business" to discuss:

1). Add a requirement to the standard requiring testing and listing by a "Nationally Recognized Testing Laboratory. The motion passed: 8 yes / 0 no (Troy Whitfield Abstained).

2). Fasteners – two members proposed new language requiring threaded inserts with minimum clearances or through-holes to reduce fouling of the thread and to require standard machine screws made of 416 Stainless Steel to be used for all covers/grates where applicable. One member pointed out that self-tapping screws, with appropriate thread profiles, are stronger than threaded inserts. A guest commented that threads are stronger than inserts, regardless of how they are inserted, during the molding process or as a secondary operation. After a lengthy discussion the committee agreed to form an ad hoc, sub-committee consisting of two members and a guest. The sub-committee is tasked to determine minimum pull-out and torque specifications for all threaded fasteners and to compose a broader definition for "alternative materials to 316 SS." The sub-committee agreed to report to the Project Team via e-mail within three weeks.

3). Limb entrapment - a motion requesting the language in Section 7, Finger and Limb Entrapment be clean up to clarify no opening may be larger than 1". The motion passed: 7 yes / 0 no / 2 abstain.

4). A member agreed to verify the proper description/specifications of hair in regards to the use of the word "cuticle" versus "follicle", or whatever the appropriate wording should be based on the information provided by human hair experts previously consulted.

5). After a very brief discussion, the acting project team secretary was asked to 'clean up' the Foreword of the standard. There was no objection and the changes requested will be made, based on the understanding that the work would be reviewed during the Project Team Balloting process.

6). A motion was made to base the revised draft on the original 1987 standard and to include a brief rationale for technical changes proposed and that a letter ballet shall be submitted to A112.19.8 Project Team, prior to being submitted to A112 Main Committee. The motion passed: 8 yes / 0 no with Troy Whitfield abstaining.

The meeting adjourned 4:58 PM.